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UNITED STATES DEPARTMENT OF AGRICULTURE
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SUGAR DURING WORLD WAR II

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by

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WAR RECORDS MONOGRAPH-3

WAR RECORDS MONOGRAPHS

The War Records Project of the United States Department of Agriculture, assigned to the Bureau of Agricultural Economics in 1943, is part of a Government-wide project, initiated by President Roosevelt and coordinated by the Bureau of the Budget, to record the history of the Government's activities in World War II. The objectives of the Departmental project have been to collect, organize and preserve the basic records of wartime administration and to prepare histories of the major war programs. These histories will be issued as War Records Studies.

To supplement the studies of major programs a series of monographs has been planned to present in greater detail the wartime changes in various sectors of agriculture. These supplementary accounts are being issued as War Records Monographs either by the Bureau of Agricultural Economics or by other agencies in this Department.

Below is a list of the War Records Monographs published or in press.

No. 1 - Farm Machinery and Equipment,
by Erling Hole. 22 p. April 1946.

No. 2 - Soil Conservation During the War,
by George W. Collier. 25 p.
March 1946.

No. 3 - Sugar During the War,
by Roy A. Ballinger. 33 p.
June 1946.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

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SUGAR DURING WORLD II

by

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Sugar was in shorter supply than most other foods in the United States throughout nearly all of World War II. It was the first food to be rationed after the outbreak of war and the only one not removed from ration control before 1946. The shortage of sugar existed in varying degrees in most of the United Nations and was generally more serious for our European allies than for the United States. This shortage of sugar was in marked contrast to the situation in prewar years when sugar was abundant and prices were extremely low from the producers' standpoint.

The wartime shortage in the United States had a combination of causes. It was largely the result of the loss of supplies normally produced in the Philippine Islands and Java, the reduced production in Europe, particularly Russia, three years of small crops of beet sugar in the United States beginning in 1943, and a very short Cuban crop of sugarcane in 1945. In addition, the use of sugar to make industrial alcohol which was needed in previously unheard of quantities largely because of the program for making synthetic rubber further reduced the amount of sugar produced for use as food.

Position at Outbreak of War, September 1939

Sugar was regarded as in surplus abundance in the world during nearly all of the decade of the 1930's. It was imported into the country from Cuba and the Philippine Islands throughout this period, but only insignificant quantities were received from other foreign sources. In an attempt to improve the situation in the United States, particularly for domestic producers, a system of quotas and subsidies was established and has been in operation since 1933.1/

The quota system provides that the Secretary of Agriculture shall determine each year the consumption of sugar in the continental United States for the following year. The law specifies the percentage of the total consumption that can be supplied by each producing area. Subsidy payments are made to growers in continental United States, Hawaii, Puerto Rico and, since 1942, the Virgin Islands to enable the sugar industries in those regions to maintain themselves financially.

When the war started in Europe, supplies of sugar in the United States were relatively large. Total stocks on September 1, 1939 amounted to 1,592,000 short tons (raw value). These were the largest stocks for that time of year since comparable records became available in 1935. Sugar production in the United States and the principal areas supplying this country with sugar was at a comparatively high level during the crop year beginning in 1939. Consequently, the United States entered the war period in an unusually good position to withstand whatever wartime shortages might develop.

Most European countries were also in a reasonably good position with respect to their immediate supplies of sugar. World sugar production in 1939 slightly exceeded the average for the 5 years 1935-39. Production of beet sugar in Europe in 1939 amounted to 10.7 million tons (raw value), which was 5 percent above the 1935-39 average.

An international sugar agreement adopted in May 1937 was in force up to the outbreak of war in Europe. The agreement provided for quotas for exports and for limitations on year-end stocks in an attempt to control supplies and maintain prices. The effectiveness of this agreement has been questioned because of the size of the quotas allotted to various exporting countries, although the outbreak of hostilities prevented a fair trial of its operations.

In every important producing and consuming country the production and marketing of sugar was more or less closely controlled by the respective governments. In many countries the system of control was more complete than in the United States. Production subsidies were paid in England and

1/ Operations were largely suspended in 1936 following the decision of the Supreme Court declaring the Agricultural Adjustment Act unconstitutional, but were resumed in 1937 under the terms of the Sugar Act, passed that year.

in nearly all European countries except Russia. Cuba and Java both had extensive systems of control designed to limit production and maintain prices; they also had multiple price systems in effect. Australia controlled production and operated a two-price system. In nearly every other important country sugar producers were subject to special regulations and they usually received direct or indirect subsidies.

This experience in regulating sugar production and marketing doubtless made it somewhat easier for the United States and other countries to apply additional wartime controls when these became necessary. Much of the organization for control, together with a great deal of detailed information about the sugar industry, was already in existence. In spite of this, considerable expansion of governmental agencies dealing with sugar in the United States occurred during the war.

Events Prior to Pearl Harbor

Immediately after the outbreak of war in Europe sugar prices in the United States began to rise. The cost and freight price of Cuban raw sugar in New York rose from an average of 1.95 cents per pound in August 1939 to 2.32 cents in September. The duty-paid price rose from 2.85 cents to 3.7 cents. As a result of this rise United States sugar quotas were suspended by Presidential proclamation on September 11, 1939. Partly as a result of the suspension of quotas and partly because fears of an immediate shortage of sugar subsided after the initial excitement of war, sugar prices in the United States declined. The cost and freight price for Cuban raws in New York averaged 1.94 cents per pound in October and 1.46 in November. Quotas for 1940 were reestablished on December 26, 1939.

During the period when quotas were suspended (Sept. 11 to Dec. 26, 1939) the duty on Cuban sugar imported into the United States was automatically increased from 0.9 cent per pound to 1.5 cents. Consequently, the duty-paid price of sugar in this country did not decline as much when quotas were suspended as the cost and freight price which does not include the duty. The average wholesale price in New York for November was 0.1 cent per pound above August, while the cost and freight price was 0.49 cent lower.

The cost and freight price of sugar in New York increased from its low point of 1.46 cents per pound in November 1939 to 1.95 cents in January 1940. It then gradually declined to 1.74 cents in August. From this point it increased slowly but consistently to 2.99 in February 1942, which had been established in January as the ceiling price for sugar in this position.[2/] The price remained at exactly this level until after V.J. Day.

Stocks of sugar in the hands of primary distributors in the United States, which were at a comparatively high level in 1939, increased still

2/ The ceiling was first established in August 1941 at 2.60 cents per pound but was raised in January 1942.

further in 1940. Stocks on January 1, 1940 reached a peak of 2.6 million tons (raw value), 13 percent above 1939. At the seasonal low point on October 1, 1940 stocks amounted to 1.4 million tons, 46 percent above the previous year.

Part, at least, of the increase in stocks in the hands of primary distributors in 1940 was the result of an abnormally large distribution of sugar in September 1939 when prices first began to rise. Sugar distribution by primary distributors for September 1939 amounted to 1.2 million tons, almost double the September average for 1935-38. Complete data regarding distribution are not available but it is certain that much of the excess distribution in September 1939 served to increase invisible stocks of sugar in the hands of wholesalers, retailers, industrial users and householders, and was not immediately consumed. Visible stocks in the hands of primary distributors averaged about 10 percent lower in 1941 than in 1940. This decline in stocks in the United States continued throughout the war. During the first 6 months of 1945, stocks averaged only 1.0 million tons as compared with 2.5 million tons in 1940.

Sugar Production during the War

Production of beet sugar in the United States in 1941 amounted to 1.6 million tons (raw basis). This was 300,000 tons below the all-time peak reached in 1940. Production in 1942 increased about 8 percent from 1941, but in 1943 it dropped to 1.0 million tons. This was a decline of 42 percent in a year and was the smallest production since 1926. Production in 1944 was only slightly above 1943. Preliminary indications for 1945 are that the crop will be at least one-third above the low point reached in 1943 but still 16 percent below the 1941 production.

The drop in production of beet sugar in 1943 and 1944 appears to have been mainly the result of a shortage of labor needed for growing beets. The production of sugar beets requires much tedious hand labor which is paid at relatively low wages. Wages in manufacturing industries were much higher and many former beet workers took factory jobs, particularly in the western States. Substitute crops which could be produced on land formerly devoted to sugar beets brought high prices during the war and required much less labor per acre to produce. In some cases, prices (including subsidies) for these crops were higher, compared with prewar, than returns from sugar beets.

The production of cane sugar in continental United States averaged somewhat higher during the war than it had in prewar years. Production in 1942, 1943, and 1944 averaged 465,000 tons, 11 percent above 1941. The shortage of labor in the cane-producing areas never became as acute as in the beet areas. Also substitute crops cannot readily be planted in most of the cane areas as was done for sugar beets.

Production of sugar in Hawaii declined moderately during the war. It averaged 880,161 tons for 1942, 1943, and 1944, about 1 percent above

1941, but 9 percent below the 1936-40 average. Part of this reduction was caused by the military services taking over some cane land for war purposes. Moreover, labor and machinery became very scarce in Hawaii. The islands were so important as a military base that many civilian laborers were employed in connection with the military forces.

Sugar production in Puerto Rico amounted to 1,147,589 tons in 1941-42. It averaged 24 percent smaller for the 3 years 1942-43 to 1944-45 and reached a low point of 721,000 tons in 1943-44.3/ The decline in production was partly the result of a sharp drop in the yield of cane per acre, caused by adverse weather conditions and a shortage of fertilizer.

The total production of sugar in continental United States, Hawaii, Puerto Rico, and the Virgin Islands in the crop year 1941 amounted to 4,026,000 tons. Production for the next 3 years averaged 3,500,000 tons or 13 percent less. In addition, nearly a million tons of sugar was received from the Philippine Islands in 1941, but none came during the next 3 years.

Sugar production in Cuba, the other important area supplying the United States, averaged higher during the war than in prewar years. It amounted to 3.8 million tons in 1941-42 as compared with an average of 3.1 tons for 1937-38 to 1940-41. Production dropped slightly to 3.2 million tons in 1942-43, then increased to 4.7 in 1943-44 but dropped to 4.0 in 1944-45. Production is expected to be somewhat higher in 1945-46 than it was in the previous year. Considerable quantities of high-test molasses were made in Cuba in 1941-42 and 1943-44. The quantity of sugar produced in those years would have been greater if part of the cane crop had not been used for making high-test molasses.

Goals for Sugarcane and Beets

The United States Department of Agriculture set production or acreage goals for all major farm products during the war. These goals were set in the fall or winter each year for the coming crop season. The goals served as a guide to farmers and agricultural workers in their production programs by indicating approximately how much of each commodity was likely to be needed during the time when next year's crop would be consumed.

Separate goals were set for sugarcane and sugar beets produced in continental United States each year, beginning with goals for the crop year 1943. In 1942 the Department of Agriculture had announced that no limitations would be placed on the acreage of sugar beets and sugarcane that could be planted without the loss of benefit payments under the Sugar Act of 1937. Such limitations had been in effect in 1941. The acreage of sugar beets harvested in 1942 was 26 percent greater than in 1941, and the acreage of sugarcane increased 22 percent. These were the high points reached during the war.

3/ Grinding of cane usually starts in January each year. Production in 1940-41 refers to cane largely grown in 1940 and manufactured into sugar in 1941.

The goals for 1943 called for 1,050,000 planted acres of beets and 340,000 harvested acres of cane. In 1944 the goals were reduced to 951,000 acres for beets and 337,000 acres for cane. Both the beet and cane goalsfor 1945 were the same as for 1944. In no year was the goal for either sugar beets or cane achieved. The acreage planted to sugar beets in 1943 amounted to only 59 percent of the goal, in 1944 to 67 percent and in 1945 to 82 percent. The acreage of sugarcane harvested in 1943 was equal to 90 percent of the goal, in 1944 to 88 percent and in 1945 to 90 percent.

The shortage of sugar was of course the chief reason that goals were set each year at a relatively high level, which producers were unable to meet. The deficiency was greater for beets than for cane but in both cases the goals apparently were based much more largely on the anticipated need for sugar than on estimates of what acreages probably would be obtained.

Government Control of Sugar Prices

Sugar prices in the United States rose about 0.6 cent per pound during the first half of 1941. In an effort to halt this rise, marketing quotas were frequently adjusted upward. However, it gradually became apparent that the increased supplies would not be sufficient to stop the rise in price because of the great expansion in demand. Consequently, in the middle of August the Office of Price Administration placed a ceiling on sugar prices of 3.50 cents per pound of duty-paid raw sugar, New York basis. This ceiling was maintained until January 1942 when it was raised to 3.73 cents per pound. It was raised to 3.75 cents in September 1944 and 4.205 cents in February 1946.

The first ceilings on refined and other sugars for direct consumption sold by primary distributors became effective December 22, 1941. The ceiling on fine granulated cane sugar refined on the Continent was set at 5.25 cents per pound at New York with offshore refined cane at 5.20 cents f.o.b. United States seaboard refineries nearest freightwise to point of delivery. The beet-sugar basis price was set at 5.15 cents per pound at the seaboard cane refinery nearest freightwise to point of delivery. These ceilings were later lifted on January 9, 1942, to 5.45 cents, 5.40 cents, and 5.35 cents, respectively. A further increase to 5.60 cents on fine granulated cane sugar processed by refineries in New York, New Jersey, Pennsylvania, and Massachusetts was allowed on March 31, 1942. Deliveries from these refineries in 1942 were confined to 10 northeastern States or smaller areas. On April 13, 1942, because of a shortage of sugar in the northeast area, fine granulated beet sugar and offshore refined cane sugars were moved into the area on the basis of 5.60 cents. Regulations provided that maximum prices should be reduced by any customary discount for cash or prompt payment.

The first ceiling on the wholesale price of sugar became effective December 22, 1941. Wholesalers were allowed to choose between the highest price charged in either the period October 6 to 11 or the period December 1 to 6, 1941, and could add any increase in cost since the period chosen. On

May 18, 1942, the General Maximum Price Regulation established the first ceiling on the retail price of sugar. On October 15, 1942, both wholesalers and retailers were given the option of charging either their previous maximum price or a specified percentage mark-up over cost, which percentage was uniform for each type of seller. The mark-up could be recalculated as often as costs changed. Wholesalers retained their maximum price option under Price Schedule 60 but this schedule was terminated on May 10 by Revised Maximum Price Regulation 237 which made the mark-up the mandatory maximum for wholesalers. Revised Maximum Price Regulation 238 terminated the option for retailers.

On May 8, 1943, authority was delegated to district OPA offices to establish and publish community maximum retail dollar-and-cents prices of sugar. District offices calculated these by adding to the bulkline price paid by wholesalers in the community the wholesale and retail mark-ups. In communities where such price ceilings were not established, the other maximum-price regulations continued to apply. Later it was provided that wholesalers and large retailers who were not buying from wholesalers could not recalculate their mark-up after August 5, 1943. The same regulation applied to small retailers after their first purchase following August 5.

There were no significant changes in sugar price ceilings from the summer of 1943 to VJ Day.

The 1935-39 average wholesale price of refined sugar in New York was 4.67 cents per pound. From April 1942 until after VJ Day this price was 5.49 cents, an increase of 17.6 percent. For the year 1944 the index of wholesale prices of all commodities averaged 29.1 percent above the 1935-39 average. The 1944 index for prices of foods was 32.7 percent, that for farm products 62.5 percent, and that for all products other than farm products and foods 21.2 percent above 1935-39. At the level of national incomes which prevailed during the war, consumers apparently would have been willing to purchase much more sugar than was available or to have paid a higher price for the quantity they did obtain.

Returns to Growers of Sugarcane and Beets

The total returns which sugarcane and beet growers received increased much more during the war than did the price of sugar. This proved to be necessary if production were to be maintained as well as it was. The increased returns to growers came largely from increased subsidy payments by the Federal Government. These payments made it possible for consumers to obtain comparatively cheap sugar while growers' returns were relatively high. This arrangement was doubtless financially beneficial to consumers of moderate and small incomes whose taxes were low, but for people with larger incomes the cost of the subsidies probably was greater than their savings in purchasing sugar.

Under the terms of the Sugar Act of 1937 and similar legislation preceding it, the Government has made "conditional" payments to beet

producers, beginning in 1933 and to cane growers since 1934. From 1938 to 1941, inclusive, the base rate of payments to producers of both beets and cane was 60 cents per 100 pounds of commercially-recoverable raw sugar. The base rate of payment was received by growers who produced less than 500 tons of raw sugar. Payments to growers who produced 500 tons or more were smaller in accordance with a sliding scale. Payments were made to producers in continental United States, Hawaii, and Puerto Rico.

"Conditional" payments in 1942 and later years have been at a base rate of 80 cents per 100 pounds raw sugar, with reductions for large producers somewhat similar to those in previous years.4/ Also, payments have been made to growers in the Virgin Islands in addition to territory formerly included. The principal conditions which growers have had to meet in order to obtain payments since 1937 involve the elimination of child labor (other than that of the immediate members of the producer's family), the payment of fair and reasonable wages, the preservation and maintenance of the fertility of the soil, marketing no more than the farm's proportionate share of the quota of the area in which it is located (suspended since 1942), and, if the producer is also a processor, the payment of fair and reasonable prices for the sugarcane or sugar beets bought from other producers.

In addition, abandonment and deficiency payments have been made under the Sugar Act of 1937, where yields were reduced or acreage was abandoned as a result of drought, flood, storm, freeze, disease or insect damage. In the case of abandoned acreage, payments are made on one-third of the normal yield of sugar on the acreage abandoned. Deficiency payments are made on the difference between 80 percent of the normal yield and the actual yield. Rates of payment per 100 pounds of sugar are the same as those of the regular "conditional" payments.

Total payments made to cane and beet producers under the 1937 Sugar Act, since the base rate of payment was raised to 80 cents per 100 pounds of sugar, have varied annually from 58 million dollars in 1942 to approximately 46 million in 1943 and 1944. Payments in 1945 are expected to total about 51 million dollars. Abandonment and deficiency payments have varied from about 4 percent of the total in 1942 to nearly 11 percent in 1943. Approximately 43 percent of the total payments for 1945 are expected to be made to sugar beet producers, 15 percent to cane growers in continental United States, 16 percent to producers in Hawaii, and 26 percent to those in Puerto Rico. Estimated payments per ton of recoverable sugar in 1945 vary from $9.32 for Hawaii to $16.20 for the continental sugar beet area. This difference is the result of variations in the proportion of large and small producers in the different areas.

In addition to the payments made under the 1937 Sugar Act, the CCC has subsidized the producers and processors of sugar beets and sugarcane in

4/ The increased payments were specified in the amendments of December 1941 to the Sugar Act.

various ways since 1942. These subsidies have been of two main types. One has been the payment of "excess" costs resulting from the war. The other type has been "incentive" payments made to growers of sugarcane and sugar beets, to encourage increased production.

Payments of excess costs have been mainly for increased costs of transportation and storage during the war. For instance, in obtaining sugar from Cuba and other islands, it was sometimes impracticable to ship the sugar from the customary port. Shipping from another port almost always involved increased expenses in moving the sugar to port. Furthermore, war conditions sometimes made it necessary to store sugar longer and in more expensive locations than would otherwise be required. Ocean freight rates, including marine insurance, increased greatly during the war. The "excess" costs of handling sugar in Cuba and of shipping it to the United States varied from about 16 million dollars in 1942 to 5 million in 1945. Similar excess costs, although smaller because of the smaller quantities of sugar involved, were incurred in moving sugar from Puerto Rico and Hawaii. Some excess costs were incurred within the continental United States in moving sugar out of its normal consumption area into areas of temporary deficit, in moving some Louisiana raw sugar during periods of low supplies to refineries other than those normally used, and in moving sugar beets to distant factories when the nearby ones normally used were closed because of the short crop of beets.

In some cases these excess costs were met by reimbursing the growers or processors who incurred them. In the case of sugar owned by the CCC, the excess costs were paid directly by the Corporation and were not reflected in the margin between the price paid by the Corporation and the price it received when selling the sugar.

Incentive payments to encourage the production of more sugar, of 20 cents per 100 pounds of sugar produced, were made in Puerto Rico and Hawaii in 1944. These were increased to 55 cents in 1945. Incentive payments of 33 cents per ton of cane were made to producers in Louisiana in 1943. These were increased to 85 cents in 1944 and $1.60 in 1945. Florida producers received an incentive payment of $1.60 per ton in 1945. They received no payments in previous years, except for 85 cents per ton for sugarcane of 1944 growth harvested on and after February 22, 1945. This payment was made to encourage the harvesting of cane damaged by a freeze in December 1944. Incentive payments to sugar beet growers in 1943 were at the rate of $1.50 per ton of beets. Payments in 1944 and 1945 amounted to $3.00 per ton of beets.

No incentive payments have been made to sugar producers in Cuba. However, the price paid for the 1945 crop of Cuban sugar, $3.10 per hundred pounds, was 45 cents above the price paid for the three previous crops. As the CCC sold this sugar to refiners at the same price as it sold the former crops, the Corporation in addition to other costs, primarily transportation, absorbed a loss of 45 cents per 100 pounds of sugar and the effect of the program was not greatly different from that of the incentive payments made to domestic producers.

Raw sugar imported into the United States from Cuba has been free of duty since May 14, 1944. The CCC has been the only importer of this sugar, and has continued to sell it to refiners at the same price as that in effect when the duty was paid. The duty equivalent which the Corporation has collected from the sugar refiners amounted to about 36.8 million dollars for the period May 14 through December 31, 1944, and 15.7 million from January 1 through May 31, 1945. These sums serve to partly offset the costs of the various sugar programs undertaken by the Commodity Credit Corporation, so far as the books of the Corporation are concerned. However, the offset does not affect the final cost to the taxpayers, since the amount of the duty that would have been collected as part of the Government revenue is exactly equal to the reduction in the expenses of the Corporation.

Sugar Allocations Among the United Nations

Shortly after Pearl Harbor the United States and Great Britain established a Combined Food Board5/ to deal with the allocation of scarce food supplies among the United Nations. Sugar was one of the commodities within the control of the Combined Food Board. The Board allocated available supplies of sugar between the member nations and other claimants, in 1944 and 1945. In 1942 and 1943 the Board made shipping recommendations and maintained a close review of the sugar situation.

The sugar under purview of the Combined Food Board constituted only about one-third of the world production but did include most of the exportable surpluses produced outside of enemy-controlled territory. The United States Government purchased substantially all of the sugar produced in Cuba and England bought the crops of Haiti, the Dominican Republic, and the British West Indies.

In allocating import supplies the principal problem was to determine the distribution of the Cuban crop, since the allocation of no single country was ever large enough to take all of the exportable supply of Cuba. Each of the Nations represented on the Board was a sizable importer of sugar. Consequently domestic production in each Nation was entirely consumed within that country. This was true of sugar produced in the insular territories of the United States as well as of the mainland crops. In prewar years, England and Canada imported a substantial part of the sugar shipped from Haiti, Dominican Republic, and the British West Indies and this arrangement was continued. In addition, when shipping was available, Canada obtained some sugar from the Fiji Islands and Australia, and England from these sources, South Africa, and Mauritius. However, each Nation, as well as other claimants, needed sizable quantities of Cuban sugar.

The allocable supply was allocated each year to various claimants according to relative need and the prospective ability of the allies to deliver the sugar to various destinations. Shipping difficulties, particularly in 1942 and 1943, made it impracticable for any country to obtain as much sugar from Cuba as might otherwise have been received. Other members

5/ Canada was made a member in 1944.

of the United Nations in need of sugar applied to the Combined Food Board for allocations. So far as practicable these allocations were made on an annual basis but frequent revisions were necessary.

The War Shipping Board exercised direct control of the actual movement of sugar by water throughout the war. An attempt was made to control the movement according to the allocations but the exigencies of submarine warfare made this difficult and sometimes impossible, in spite of the attempt to allow for these difficulties when setting the allocations. Part of the Cuban sugar crop of 1943 was not harvested because of the fear that it would be impossible to move all the sugar from the island or find storage space in Cuba for the part that could not be shipped. This action resulted in considerable 2-year-old canebeing harvested in Cuba in 1944 and contributed materially to the size of the crop harvested that year.

Sugar Allocations within the United States

After the allocations of the Combined Food Board had been made, the next step in the United States was for the Department of Agriculture, in cooperation with other agencies, to allocate this country's supplies to various claimants. The largest claimants were civilians, various branches of the military services, and relief agencies. These allocations were made on a quarterly basis for a year in advance. They were revised each quarter and estimates for a new quarter were made.

The allocations were made up by obtaining estimates of needs from the interested agencies of the Government. That is, the military services and other agencies submitted estimates of their own needs. These estimates were combined into totals which were compared with estimated available supplies. The actual allocations necessarily represented some compromise with respect to the original requests as there was almost always a need for more sugar than was available. The largest adjustments were usually made in the quantities allotted to civilians, since civilians always received by far the largest share of the total. Military requests were seldom reduced.

The quantity of sugar used by a given claimant in a given period sometimes differed rather substantially from the allotment for that quarter. In 1944 and the first half of 1945 civilians received substantially more sugar than had been allotted to them. For the year 1944 this apparently amounted to about 775,000 tons or 14 percent more than the allocations. The military services actually received nearly 10 percent less sugar than was allocated to them in 1944. However, the deficit in military takings was much smaller than the surplus takings by civilians, so the total quantity of sugar distributed in 1944 was about 600,000 tons more than the total allocations.

No satisfactory method of controlling the distribution of sugar by refiners and other primary distributors was adopted until June 12, 1945 when a distribution order (WFO 131) was issued. The order specified the quantity of sugar each primary distributor could deliver to each of the four classes of users during the period April to September 1945. The four

classes were: War Food Administration, Government agencies other than the War Food Administration and the War Shipping Administration, authorized purchasers, and civilians. The term "authorized purchaser" was defined as, "any person who delivers sugar or any product containing sugar to a governmental agency, or who obtains sugar for export under a license issued by the Foreign Economic Administration."

The total quantity of sugar which distributors were permitted to deliver during the 6-month period was 3,359,815 tons[6/] plus whatever stocks of sugar mainland cane direct-consumption mills had on April 1, 1945. These amounted to 30,676 tons. Approximately 79 percent of the total was allotted to civilians, 7 percent to authorized users, 12 percent to Government agencies other than the War Food Administration, and 2 percent to the War Food Administration.

There was a strong demand throughout the war for sugar in the form of invert molasses to be used in manufacturing industrial alcohol. The need for industrial alcohol increased tremendously, chiefly for use in making synthetic rubber.

The principal materials used for making industrial alcohol during the war were blackstrap molasses, invert molasses, and various grains. Blackstrap molasses, which is a byproduct of the production of sugar, had been an important source of industrial alcohol for many years and virtually all the blackstrap molasses produced during the war was used for this purpose. Invert molasses is a product made from sugarcane which contains all the sucrose and other sugars that would otherwise be made into sugar and blackstrap molasses. Consequently, when invert molasses is produced from cane no sugar is obtained. Invert molasses is a cheaper source of industrial alcohol than are the grains, and the manufacturing process is simpler. Before the war invert molasses had been used only to provide an additional market for surplus cane in Cuba and Puerto Rico.

All of the invert molasses produced during the war was made in Cuba. In 1940, Cuba produced invert molasses equivalent to about 730,000 tons of raw sugar; in 1941, 1,360,000 tons; in 1942, 690,000 tons; and in 1944, 900,000 tons. No sugarcane was used for invert molasses in 1943 or 1945 because of the shortage in sugar supplies. The production program for industrial alcohol was largely determined by agreement between the U. S. Department of Agriculture and the War Production Board.

Sugar Rationing in 1942

Immediately following Pearl Harbor, the Government was faced with the problem of preventing maldistribution of available supplies of sugar. To stop panic buying and excessive hoarding, Order M-55 was issued by the predecessor of the War Production Board. This order froze existing stocks of sugar in the hands of users and prevented deliveries in excess of corresponding 1940 levels. During the first 4 months of 1942 deliveries were limited to 80 percent of corresponding 1941 usage for all industries.

6/ Actual tons as delivered, which is mostly refined sugar.

In the early part of 1942, before the inception of formal rationing, actual receipts of sugar from all offshore areas were extremely limited. Stocks, particularly in the northeastern part of the country, declined to critical levels and supplies in most instances were insufficient to meet requirements even under the WPB Limitation Order. Late in April 1942, a formal rationing program was instituted by the Office of Price Administration. The first ration period for industrial and institutional users began on May 1 and for individual consumers on May 5. The purpose of rationing was to reduce demand to the indicated supply and to distribute the supply more equitably. In the original program a basic ration of 26 pounds per year was allotted to individual consumers. This was considered to represent about half the 1941 individual use. The ration to institutions was also about 50 percent of 1941 use. Industries were cut to 70 percent of 1941 use -- this figure was considered to represent the lowest rate under which industries could operate without causing undue hardship.

Immediately after the inauguration of rationing, deliveries of sugar feel sharply to less than half those of the preceding month. Actual consumption probably was greater than deliveries, because of the use of excess stock in the hands of jobbers, manufacturers, and consumers. June deliveries were also less than the estimated consumption. Arrivals from offshore during May 1942 increased moderately so that total stocks were brought into better balance with the curtailed demand. Although arrivals, particularly from the Caribbean, declined drastically during July and August, the improved stock position, resulting from the controls over demand, permitted some liberalization of the rationing program. Accordingly, consumers were granted a 2-pound bonus for use between July 10 and August 22, 1942, while industrial users were permitted to use 80 percent of their 1941 usage for the 4-month period, July through October. The combination of drastically lowered receipts and a liberalized ration reduced stocks, as of October 1, 1942, to less than one-half the quantity that was in the country a year earlier.

Obviously it was no longer possible to continue the liberalized rationing program, and on November 1, 1942 the ration was returned to the basic 70 percent for industrial users and home consumers were cut to a basis of 2 pounds per calendar month (24 pounds per year), as compared with 8 ounces per week or 26 pounds per year, previously in effect. At the end of 1942 actual stocks were not far below the goal set up under the rationing program.

Sugar Rationing in 1943

Arrivals of sugar from the Caribbean showed gradual improvement during the first part of 1943. This favorable situation was brought about by the diversion of shipping from other areas, by the operation of a shuttle service between Cuba and Florida, by increased efficiency in the utilization of shipping facilities, and by a reduction in the submarine menace.

Improvement in shipping during early 1943 was partly offset by a prospective sharp reduction in domestic beet-crop prospects and by increased rations. A home-canning program was adopted under the terms of which any consumer could obtain 10 pounds for home canning, and persons who had large fruit supplies could obtain, in addition, a maximum of 15 pounds per capita upon application to their local ration board.

The improved situation in shipping and inland transportation brought a continued increase in receipts during the early summer months of 1943. Receipts during July reached the highest level since the middle of 1941. The allocation to all industrial users was increased to 80 percent of 1941 use for August, September, and October, 1943, and additional special allotments were authorized. A shortage of deliveries of corn for processing led to a shortage of corn sugar and sirup which was relieved in part, on July 10, by the authorization of a special allotment of sugar to manufacturers for July and August. On July 21, an increase in the provisional allowance of sugar for the commercial canning of the 1943 fruit crop raised the canners' allotment from 90 percent to 100 percent of 1941 usage. On August 14, manufacturers of fruit preserves were given a special allotment not to exceed 40 percent of their sugar base for such products for August, September, and October, 1943. Bakers of products containing 10 parts or less of sugar to grain or flour were given a supplemental allotment and so were manufacturers of pharmaceuticals. During November and December all industrial users were granted bonuses which raised their base to 90 percent or higher.

Sugar Rationing in 1944

Beginning with the stamp that was validated on January 16, 1944, consumers' ration stamps were made good for an indefinite period, rather than expiring on a certain date. This was done to avoid the rushing of consumers to spend their ration stamps before expiration, regardless of immediate need. Rations to individuals were at the rate of 24 pounds per year. Individuals also were permitted to obtain 25 pounds of sugar per person for home canning in 1944.

The allotment of sugar to industrial users continued on the more liberal basis established in August 1943. The allotments for each calendar quarter, instead of each 2-month period as was the case in 1943, were still based on the quantity used in the base period, which became the corresponding quarter of 1941. In 1944, the ration was 80 percent, with the exception of a brief period in the second quarter. The original allotments for the second quarter were 70 percent, but before the end of the period these were raised to 80 percent and the increase was made retroactive to the beginning of the quarter. Also, after August 1943, supplemental allotments above 80 percent were given to users in certain industries. The list of such industries varied from time to time but it usually included the manufactures of breakfast cereals and bakery products, fruit preserves, drugs and chemicals that were of low sugar content. Concerns that were located in areas that had had substantial increases in population during the war were permitted additional sugar.

Sugar Rationing in 1945

Sugar supplies were much smaller in 1945 than at any previous time during the war. Sugar stamps No. 30 to 34 inclusive had been made good for an indefinite period when they were issued at various dates during 1944. But with shorter supplies available for 1945, all of these stamps, except No. 34, were cancelled, effective at the end of 1944. This was done to avoid having these old stamps, unused by consumers in 1944, used in 1945, with consequent further reduction in supplies available to some consumers. Stamp No. 34 was cancelled effective February 28, 1945.

On February 1, 1945 the consumer ration was reduced to 0.393 pound per week per person. A further reduction was made on May 1 to 0.285 pound. These reductions were made by lengthening the period between the validation of sugar stamps.

The home-canning program for 1945 allowed a maximum of 15 pounds of sugar per person or 120 pounds per family, whichever was smaller, for home canning. This was only 60 percent of the maximum per person which was permitted in 1944. It was even less for members of large families, as the maximum family allowance was only equal to that of 8 individuals. In 1945 special application had to be made for all the sugar obtained for home canning, whereas in 1944 each individual could obtain 5 pounds in exchange for a special ration stamp. Not more than a total of 5 pounds per person of home canning sugar could be used for canning vegetables or making jams, jellies, relishes, catsup, and similar items in 1945. Applications for sugar for home canning had to be made by October 31, 1945.

Beginning in March 1944, institutional users of sugar, such as restaurants, hotels, hospitals, etc. were given allowances of sugar based on the quantity of baking done by the institution, the number of meals served, and the quantity of sugar used in the base period. From May 1 to December 31, 1944, the allowance was 0.03, 0.04 or 0.05 ounces per person per meal, or 100 to 120 percent of the quantity used in the base period, whichever was smaller. The base period was December 1942. The smallest allowances were made to institutions that did none of their own baking, the largest to those doing 75 percent or more of their own baking. On January 1, 1945, allowances to institutional users were reduced -- 15 percent to institutions doing no baking and 10 percent to other institutions. On May 1 further reductions were made, to levels 30 and 25 percent under the May-December 1944 rates.

Basic allotments to industrial users were reduced to 70 percent of the base period for the first quarter of 1945 and to 65 percent for the second quarter as compared with 80 percent in 1944. However, during the first quarter of 1945, manufacturers of bread and bakery and cereal products were allowed 80 percent of their base usage, and pharmaceuticals were allowed 125 percent. These were reduced in the second quarter to 75 and 120 percent, respectively. The manufacturers of ice cream and related products were allowed 70 percent of their base usage during the second quarter. Manufacturers of spreads for bread were allowed 70 percent of their base which is 1944.

Basic allotments to industrial users were further reduced to 50 percent of their base during the third quarter of 1945. Manufacturers of bread, bakery products, and cereals were allotted 60 percent of their base use and pharmaceuticals 110 percent for this period. These were the lowest ration levels yet established.

Ration levels established for the third quarter of 1945 were continued practically unchanged for the fourth quarter of 1945 and the first quarter of 1946. This was true not only for industrial users but also for individual consumers and institutional users.

Government Purchase of Sugar and Molasses

Shortly after the United States entered the war in December 1941, it became apparent that the shipment of sugar and molasses from offshore areas to continental United States needed to be centrally controlled if efficient use was to be made of available shipping so that the sugar in exporting areas could reach this country in maximum quantity. Rigid control of shipping by the Government made it impossible for private importers to obtain delivery of sugar or molasses from individual companies in these areas.

Control over supplies of sugar and molasses produced in Cuba and Puerto Rico was obtained by Government purchase of substantially all the production of these areas during the war years. The Government took title to the sugar and molasses in Cuba and Puerto Rico, shipped them to this country and resold them to refiners and dealers. Until 1945 the purchase and sale prices were so arranged that the Government obtained the customary peacetime margin. The price paid for Cuban sugar in 1945 was raised 0.55 cent per pound but prices to dealers in the United States were not changed and the Government absorbed the resulting loss.

The Government did not purchase the sugar shipped from Hawaii to continental United States. Practically all of this sugar was delivered to two refineries, both located in the San Francisco area. This and other factors simplified the problem of moving Hawaiian sugar as compared with that from other offshore areas. However, shipping was under the control of the War Shipping Administration and the physical handling of the sugar was arranged in much the same way as for Cuban and Puerto Rican sugar.

Purchases from Cuba

Beginning with the 1941-42 crop the United States Government purchased the entire crops of sugar and molasses produced in Cuba, with the exception of the quantities consumed in the island, and in some years small quantities for export to Latin America. The first Government contract for the purchase of Cuban sugar, between the Defense Supplies Corporation and the Cuban Sugar Stabilization Institute, became effective January 28, 1942. This contract covered the sale of invert molasses, blackstrap molasses, and sugar produced from the 1941-42 crop.

The price paid for the crop was 2.65 cents per pound, basis 96 degree polarization delivered f.o.b. Cuba at normal shipping ports. Excess costs involved in shipping from abnormal ports because of wartime shipping conditions were borne by the United States Government. The contract provided that one-third of the crop was to be produced in the form of invert molasses. However, this was later reduced to the quantity equivalent to approximately 700,000 short tons of raw sugar. This invert, plus the blackstrap molasses obtained as a byproduct in manufacturing sugar, was bought for 2.50 cents per pound of sugar content.

The 1942-43 Cuban crop of raw sugar was purchased by the Commodity Credit Corporation. The price was the same as for the previous year's crop -- 2.65 cents per pound f.o.b. Cuban port for sugar polarizing 96 degrees. Other price stabilization agreements were reached at the same time. No invert molasses was produced in Cuba in 1943. The Commodity Credit Corporation also bought the 1943-44 crop of Cuban sugar, except 200,000 tons for local consumption at 2.65 cents per pound.

The Commodity Credit Corporation purchased the 1944-45 crop of Cuban sugar from the Cuban Sugar Stabilization Institute at a minimum price of 3.10 cents per pound for sugar polarizing 96 degrees. The sugar was delivered to the CCC at loading ports in Cuba. The contract provided that the minimum price was to be increased by the amount of any increase in the ceiling price of raw sugar in the United States c.i.f. New York, duty paid, above the sum of 4.20 cents per pound and any ocean freight absorbed by CCC above the basic rate of 0.34 cent per pound. The minimum price was also to be increased if, in any quarter or quarters of 1945, the index in the cost of living in the United States was more than 4 percent above the index during the last quarter of 1944. The percentage increases in price for each quarter for which there was an increase was to be equal to the percentage increase in the cost of living for one-fourth of the raw sugar purchased but in no event was the price to exceed 2.65 cents per pound plus the amount paid as price-support payments by the CCC to Caribbean possessions of the United States. The increase in the total amount of money paid as a result of an increase in the cost of living was not to be more than the excess of such increase over any increase resulting from a rise in the ceiling price or ocean freight rates.

The price paid for the 1944-45 crop was 0.45 per pound higher than the price paid for the three previous crops. The increase in price did not cause any increase in sugar prices in the United States. The CCC delivered the sugar to continental refiners at the same price as in previous years.

The CCC bought the entire crop of Cuban sugar, except for approximately 284,000 short tons reserved for consumption in Cuba and about 170,000 short tons for free export, most of which went to Latin American countries. Part of the Cuban sugar purchased by the United States was consumed in Canada, Great Britain, the USSR, and liberated areas. As in previous war years, the distribution was determined by the shipping authorities and the Combined Food Board.

The Defense Supplies Corporation purchased the exportable blackstrap molasses produced from the 1941-42, 1942-43 and 1943-44 Cuban sugar crops. It also bought invert molasses made from the 1943-44 crop, equivalent to 900,000 short tons of raw sugar. The price paid for both invert and blackstrap molasses delivered at Cuban port terminals was 2.50 cents per pound of sugar content. However, the price for blackstrap was subject to a deduction of 2 cents per gallon for molasses containing 52 percent sugar, with a scale of premiums and discounts if the sugar content is greater or less than 52 percent.

The Defense Supplies Corporation bought alcohol produced in Cuba from the 1943-44 sugar crop. The contract provided that the quantity purchased was not to exceed 20.5 million wine gallons of 190-proof or equivalent alcohol. The price paid was 65 cents per gallon for 190-proof alcohol delivered at Cuban ports. The purchase of alcohol from Cuba was arranged in order to permit the manufacture of some molasses into alcohol in Cuba rather than importing the entire supply of molasses into this country for manufacture into alcohol.

The exportable supply of blackstrap molasses from the 1944-45 Cuban crop was purchased by the Defense Supplies Corporation at the same price as had been paid for the two previous crops. But as in the case of sugar, the 1944-45 price was to be increased by the amount of any increase in the ceiling price of raw sugar c.i.f. New York, duty paid above 3.75 per pound, except that if the ocean freight rate from one port north side Cuba to New York exceeded 34 cents per hundred pounds, the amount of such excess up to 6 cents per hundred pounds was first to be deducted from any ceiling price increase.

Purchases from Puerto Rico, Dominican Republic, and Haiti

The Commodity Credit Corporation bought the 1942-43 and 1943-44 sugar crops of Puerto Rico from individual sugar producers. The price paid was 3.46 cents per pound, basis 96 degrees polarization, for sugar delivered on shipboard in Puerto Rico. In 1943-44, an additional payment of 20 cents per 100 pounds of sugar was made for the benefit of cane growers. The purchase offer covered the entire crops except sugar used for local consumption and sugar sold before the effective date of the first contract.

The CCC also purchased the 1944-45 sugar crop of Puerto Rico from individual sugar producers. The minimum price was 3.46 cents per pound for raw sugar delivered at shipside. This was the same as had been paid in the two previous years, but in addition to the purchase price, the CCC paid to each seller of sugar a support payment of 0.55 cent per pound of raw sugar. Cane growers received 0.45 cent of this amount and mills 0.10 cent. The price of the sugar was to be increased by 35 percent of any increase in the ceiling price for raw sugar c.i.f. New York over 4.11 cents per pound up to 4.51 cents per pound, and 100 percent of any increase above 4.51. The processors were to share in any increase in market proceeds only if the price rise was sufficient to eliminate the CCC support payment to the mills.

The 1942-43 and 1943-44 sugar crops of the Dominican Republic and Haiti were purchased by the Commodity Credit Corporation. The basic price paid for both crops in both countries was 2.65 cents per pound for sugar polarizing 96 degrees, shipped to countries other than the United States. The price for sugar shipped to the United States, because of the tariff differential, was 2.425 cents per pound. Ordinarily, only small quantities of sugar from these countries are shipped to the United States and very little of the 1942-43 or 1943-44 crops was sent here. Purchases of Dominican and Haitian sugar for 1944-45 and 1945-46 were made by the United Kingdom.

The exportable supply of blackstrap molasses from the 1942-43, 1943-44, and 1944-45 crops of Puerto Rican sugarcane was bought by the Defense Supplies Corporation. The price in each of the 3 years was 2.50 cents per pound of sugar content, less 2 cents per gallon for molasses containing 52 percent sugar, with a scale of premiums and discounts if the sugar content was greater or less than 52 percent. The prices were the same as those paid for Cuban blackstrap molasses.

Effects of the Sugar Program

No attempt was made in this study to measure statistically the various effects of the Government's sugar program. Accurate measurements would be difficult or impossible for many parts of the program. But it is possible to determine the general nature and direction of the effects of many of the Government's actions.

It appears certain that, during most of the war period, price ceilings on sugar kept the prices paid by consumers much lower than they would have been without price control. This was particularly true in 1945 when the quantity of sugar available to civilians reached its lowest level and the purchasing power of consumers was at the highest point since the beginning of the war.

Market prices of sugarcane and sugar beets, based on the ceiling price of sugar, were insufficient to maintain production of these crops by farmers. As a result, sizable subsidies were paid to producers to encourage production. This method of increasing returns to growers left the margins between raw-material costs and sugar prices at comparatively low levels for both cane and beet sugar mills. Such mills buy their cane or beets on contracts at prices that vary with the price of sugar but that provide a widening margin for the mills as prices for sugar advance. Ceiling prices prevented these margins from widening as much as mill costs increased; therefore, it became necessary for the Government to make subsidy payments to processors.

The net effect of low sugar prices and high subsidies as compared with what might have happened with higher prices and lower subsidies is difficult to ascertain. Consumers with low incomes doubtless benefited from the policy, but those with higher incomes may ultimately pay more in higher taxes, to provide for the subsidy payments, than they saved from low prices for sugar.

The existence of price ceilings which kept consumer prices for sugar substantially lower than would otherwise have been expected made rationing necessary in order that supplies could be distributed fairly. In fact, sugar was the first food to be rationed during the war and the only food still rationed during 1946.

The primary problem in rationing was to obtain reasonable equity between consumers without making the rationing system unduly complicated. Any system of rationing necessarily involves some compromise between equity and administrative feasibility. The sugar rationing and related programs were necessarily complicated. They involved first the division of supplies between the United States and other countries, then the division between the military services, UNRRA and other special claimants, and civilian consumers in this country.

No exact method of determining equitable allotments of sugar even between the major groups of claimants was developed. During most of the war, requests from the military services and many of the other special claimants were largely met. Thus civilian claimants had in effect the lowest priority and the quantity left for them was mainly a residual. Therefore, civilian supplies varied more widely from time to time than would otherwise have been the case.

The division of supplies between civilians involved programs for households, industrial uses, institutional uses and home canning. Sugar rations for households always provided uniform quantities per person, the quantity varying from time to time with the available supplies of sugar. A uniform ration for each individual was doubtless necessary for administrative reasons but equality, in this case, did not result in equity. For instance, families accustomed to doing most or all of their own baking were more severely limited by the ration than were those who bought their baked goods. Persons who had some of their meals at restaurants were able to obtain more sugar than others, because their individual rations were not reduced unless more than one-third of their meals were had away from home. Persons doing heavy physical work whose needs may have been greater were not able to obtain any more sugar than others.

Industrial users were rationed on the basis of the quantity of sugar each company had used in the base period but the percentage of base use allotted to different industries varied considerably according to the apparent need for the products of each industry. Such an arrangement was obviously in the public interest, since the products of some industries were more essential than those of others. However, the procedure resulted in more severe restrictions on the volume of business and possible profits in some industries than in others.

Sugar for home-canning programs was intended to encourage as much home canning as possible, so that total food supplies might be increased. This program suffered greatly from lack of effective controls. In 1943 and 1944 some sugar for home canning could be obtained by anyone in exchange for a special ration stamp. No evidence that the sugar so obtained was to

be used on home canning was required and no record was kept to show who used such stamps. Additional sugar for home canning could be obtained by presenting a written application to the local ration board. Persons who got sugar through these applications were required to declare their intention of using the sugar for home canning, but no attempt was made to learn if the sugar was actually so used.

The greatest difficulty with the home-canning program occurred in 1944. Sugar was somewhat more plentiful that year than in either of the 2 previous years, and much more than in 1945. In contrast, supplies of fruits and vegetables were comparatively short. Under the circumstances, allocations of sugar for home canning were comparatively liberal and people were able to obtain practically all of the sugar called for by their special ration stamps and approved applications. Local ration boards were apparently very liberal in approving applications. As a result, the issuance of sugar for home canning in 1944 totaled about 50 percent more than the quantity originally allocated for that purpose. There is no way of learning accurately how much sugar was actually used for home canning, but estimates of the extent of home canning actually done would indicate that a large proportion of the sugar issued for home canning that year was actually used for other purposes.

The purchase of sugar by the United States Government from Cuba and Puerto Rico involved protracted negotiations each year, particularly with Cuba. In 1945, the price to be paid for Cuban sugar was not finally agreed upon until after the mills in Cuba had been grinding cane for some time and part of the sugar had actually been shipped to this country. Dissatisfaction with price and subsidy payments for Puerto Rican sugar led to a strike in the mills early in 1945.

Difficulties such as these appear to be more or less inevitable because of the conflicting desires of the United States Government to provide cheap sugar for consumers and of growers to obtain increased returns. Except for the strike in Puerto Rico, there is no reason to think that these difficulties caused any decrease in the production of sugar. There is no way of measuring accurately the effect of the strike on Puerto Rican production, but it is generally believed to have been small. It is still true that if producers in Cuba and other areas had received larger returns per pound of sugar, they might have produced more, but this is uncertain, in view of abnormal wartime conditions.

In spite of the difficulties involved, it seems certain that the benefit from the various Government sugar programs greatly outweighed any harm they may have caused. These programs were, of course, merely a small part of the Government's attempt to control prices and distribute goods equitably. So long as other commodities were being controlled, similar controls for sugar were obviously necessary.

The Postwar Sugar Situation

When World War II ended, world supplies of sugar were at their lowest level since the outbreak of the war. Sugar rations in the United States were the smallest since the start of rationing. The shortage was largely the result of the loss of production from the Philippines and Java and the reduced production of sugar beets in the United States and Europe. Moreover, the Cuban sugar crop in 1944 was unusually small.

It will probably be several years before world sugar supplies return to a normal level, although some increase is in prospect for 1946. The restoration of cane and beet fields in war-devastated areas and the repair of damaged milling equipment may be rather slow, particularly in view of disorganized conditions in many parts of the world. World production will have to exceed world consumption, perhaps for several years, before stocks of sugar can be increased from their present low level to a point where normal trade conditions can prevail. This does not mean that Government purchases, rationing, and price control, will need to continue that long. These programs probably can be suspended or greatly modified as soon as the more acute phase of the difficulties is passed.

In spite of the prospect of short supplies of sugar for the next 2 or 3 years, the situation is such that over a longer period a surplus of sugar is more likely than a shortage. There was a chronic oversupply during much of the period between World War I and World War II. Because of technological advances, the potential productive capacity is as great now or is greater than it was then.

Most of the areas of the world that export sugar are located in the tropics and produce their sugar from sugarcane. Most of the important importing areas are in the temperate zones and produce considerable quantities of sugar from beets, which competes with the imported sugar. This has been influential in bringing about the establishment of import controls -- tariffs, quotas, etc. -- by importing nations.

Tropical areas that produce cane sugar for export may be divided roughly into two groups. One group consists of areas that belong to some importing nation which levies a high tariff or otherwise discriminates against sugar coming from areas outside its political control. The other group consists of areas that must market all or a considerable part of their export surplus in countries which do not grant them any advantages over exports from other areas.

Hawaii and Puerto Rico are excellent examples of the first group of surplus-producing areas. All their shipments come to the United States because they enter free of duty. Before the war, the Philippine Islands were in the same category. Various tropical islands belonging to the British and French Empires belong in the same group as Hawaii and Puerto Rico, although the degree of advantage in shipping sugar to their mother countries was less in some cases than that of the island territories of the United States.

Cuba is the most important example of the second group of tropical surplus-producing areas. Cuba, of course, enjoys a tariff differential, compared with other foreign nations, in exporting sugar to the United States but the export surplus from Cuba for many years has been larger than would be absorbed by the United States market. Consequently, sugar is exported from Cuba to countries that grant no tariff or other import preference to the sugar.

Whenever world supplies of sugar become so large as to constitute a surplus rather than a shortage in the minds of most people, countries which export sugar to markets where they receive no special protection are likely to suffer more from low prices and restricted market outlets than are other areas. During the interwar period, this situation led to several international agreements, culminating in the International Sugar Agreement of 1937. This agreement provided a system of export quotas. It was inoperative during the war but may become operative again since it has not been abandoned.

During the interwar period, domestic producers of sugar in nearly all of the chief importing Nations -- and even some of the exporting ones -- received significant protection from competition with sugars from other countries. This protection took various forms, including tariffs, import quotas, direct subsidies to domestic producers and, in some exporting countries, a two-price system. Most Nations employed more than one type of protection.

Prospects for future sugar production in various areas depend to a considerable extent on the amount and kind of controls over international trade that may prevail. Increased freedom of international trade will favor export areas -- mainly certain tropical islands. It will restrict opportunities in most of the sugar-beet-producing areas of the world and a few cane areas such as Louisiana, Florida, and Australia.

Increased world prosperity and purchasing power, if achieved, might increase the size of the world market considerably. If the consumption of sugar in such countries as China could be increased even a few pounds per capita, world consumption of sugar would increase greatly.

Table 1.- Sugar (raw): Stocks, production, trade, and supply available for consumption in continental United States, 1939-44

Year beginning July	Stocks as of July 1 1/	Production 2/	Brought in from Insular Possessions 3/	Imports as sugar 4/	Domestic exports as sugar 5/	Domestic exports in other forms 6/	Available for consumption	
							Total	Per capita
	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Pounds
1939	2,019,871	2,262,000	2,570,374	2,512,263	227,115	13,733	7,003,225	107.7
1940	2,120,435	2,229,000	2,995,960	2,405,449	68,237	12,533	7,587,320	114.4
1941	2,082,754	2,007,000	1,714,269	2,543,599	145,419	18,540	6,568,344	98.1
1942	1,614,819	2,186,000	1,586,737	2,264,800	194,859		5,978,628	88.2
1943	1,478,869	1,496,000	1,623,883	3,839,324	486,080		6,664,279	97.0
1944 7/	1,287,717	1,530,000	---	---	---		---	---

1/ Stocks include raw and refined sugar held by refiners, by importers and distributors of direct consumption sugar, and by beet-sugar factories, as reported by the Sugar Branch, U. S. Department of Agriculture.
2/ Beet and cane sugar only.
3/ Duty free, from Hawaii, Puerto Rico, Philippine Islands, and Virgin Islands.
4/ No account taken of sugar imported in other forms.
5/ Includes shipments to Hawaii, Puerto Rico, Alaska, and the Virgin Islands. Direct exports to foreign countries through customs districts of noncontiguous territories excluded.
6/ Sugar used in the manufacture of other commodities for export on which drawback was paid.
7/ Preliminary.

Table 2.- Sugar chiefly raw: Production in Continental U. S. and principal areas supplying U. S. with sugar, 1939-44

Crop year 1/	Cane							Beet 3/	Cane and beet	
	Continental United States	Puerto Rico	Hawaii	Philippine Islands 2/	Virgin Islands	Total of preceding columns	Cuba	Total including Cuba	Continental United States	Excluding Cuba	Including Cuba
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons	1,000 tons
1939	504	1,019	977	1,142	7	3,649	3,128	6,777	1,758	5,407	8,535
1940	332	932	947	1,148	8	3,367	2,734	6,101	1,897	5,264	7,998
1941	419	1,148	870	4/	1	2,438	3,804	6,242	1,588	4,026	7,830
1942	460	1,039	886	4/	4	2,389	3,240	5,629	1,726	4,115	7,355
1943	498	721	875	4/	3	2,097	4,741	6,838	998	3,095	7,836
1944 5/ ..	437	850	880	4/	4	2,171	4,000	6,171	1,134	3,305	7,305

1/ Crop year with beginning dates varying from September to the following June. 2/ Includes the production of moscovado and panocha - low grades of sugar mostly used for domestic consumption. 3/ Beet sugar (refined) reduced to raw basis by multiplying by 1.07. 4/ None of the Philippine production since 1941 was available to supply the United States. 5/ Preliminary.

Table 3.- Average price per pound of sugar in the United States, annual 1939 to 1945

Item	1939	1940	1941	1942	1943	1944	1945
	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Raw sugar:							
Wholesale, cost and freight, New York	1.91	1.89	2.48	2.99	2.99	2.99	2.99
Wholesale, duty paid, New York	3.00	2.80	3.40	3.73	3.74	3.75	3.75
Wholesale, insurance and freight, London converted to New York basis	1.59	1.33	1.85	2.99	2.99	2.99	2.99
Refined sugar:							
Wholesale, New York	4.57	4.34	4.92	5.49	5.49	5.49	5.49
Retail, average of leading cities	5.60	5.20	5.70	6.80	6.80	6.80	6.80

Table 4.- Sugar beets and sugarcane: Season average price per ton received by farmers, and payments per ton under Federal sugar programs, United States, 1930-44

Crop year	Sugar beets			Sugarcane		
	Price	Payments under Federal sugar programs 1/	Total receipts per ton	Price	Payments under Federal sugar programs 1/	Total receipts per ton
	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.
1930	4.14	--	7.14	3.31	--	3.31
1931	5.94	--	5.94	3.21	--	3.21
1932	5.26	--	5.26	2.98	--	2.98
1933	5.13	2/ 0.23	5.36	3.18	--	3.18
1934	5.16	3/ 1.75	6.91	2.33	3/ 2.31	4.64
1935	5.76	3/ 1.13	6.89	3.15	3/ 1.45	4.60
1936	6.05	4/ --	6.05	3.67	4/ --	3.67
1937	5.27	4/ 1.88	7.15	2.90	4/ .96	3.86
1938	4.65	4/ 1.87	6.52	2.70	4/ 1.04	3.74
1939	4.76	4/ 1.95	6.71	2.84	4/ 1.04	3.88
1940	5.16	4/ 1.87	7.03	2.73	4/ 1.03	3.76
1941	6.47	4/ 1.86	8.33	4.00	4/ 1.02	5.02
1942	6.87	4/ 2.41	9.28	4.40	4/ 1.40	5.80
1943	7.51	4/ 3.91	11.42	4.32	4/ 1.58	5.90
1944 5/	7.53	4/ 5.79	13.32	4.22	4/ 1.91	6.13

1/ Representing gross payments relative to sugar beets and sugarcane marketed before applying penalties which were imposed in several years and before deducting county association expenses which were charged in all years except 1933; payments with respect to crop deficiency and acreage abandonment have not been included.

2/ Processing-tax refund, pursuant to the Jones-Costigan Act.

3/ Parity payments, pursuant to the Jones-Costigan Act.

4/ Conditional payments under the Sugar Act of 1937, computed at the basic rate before adjusting for reductions applicable to large producers as provided for in Section 304 (c), not including payments made in 1936 and 1937 under the Soil Conservation and Domestic Allotment Act which averaged about the following amounts to participating growers: Sugar beets, 39 cents per ton; sugarcane, 20 cents per ton. Includes price support payments for beets of $1.36 per ton in 1943 and $3.17 per ton in 1944 and cane of $0.30 per ton in 1943 and $0.73 in 1944.

5/ Preliminary.

Table 5.- Individual consumer sugar ration stamps, valid periods and weight values

Ration period	Number of valid stamp	Weight value of valid stamp	Weight value of valid stamp per week
		Pounds	Pounds
May 5 to May 16 1942	No. 1 - Book 1	1	.583
May 17 to May 30 "	No. 2 " "	1	.500
May 31 to June 13 "	No. 3 " "	1	.500
June 14 to June 27 "	No. 4 " "	1	.500
June 28 to July 9 "	No. 5 " "	2	.500
July 10 to July 25 "	No. 5 and No. 7-Book 1 " "	1/	.818
July 26 to Aug. 22 "	No. 6 and No. 7 " "	2/	.818
Aug. 23 to Oct. 31 "	No. 8 " "	5/	.500
Nov 1 to Dec. 15 "	No. 9 " "	3	.467
Dec. 16, 1942, to Jan. 31, 1943	No. 10 " "	3	.447
Feb. 1 to Mar. 15 "	No. 11 " "	3	.488
Mar. 16 to May 31 "	No. 12 " "	5	.455
June 1 to Aug. 15 "	No. 13 " "	5	.461
Aug. 16 to Oct. 31 "	No. 14 " "	5	.455
Nov. 1, 1943 to Jan. 15, 1944	No. 29 - Book 4	5	.500
Good indefinitely after Jan. 16 3/	No. 30 " "	5	4/ .461
" " " April 1	No. 31 " "	5	4/ .461
" " " June 16	No. 32 " "	5	4/ .461
" " " Sept. 1	No. 33 " "	5	4/ .461
" " " Nov. 16	No. 34 " "	5	4/ .461
Feb. 1 to June 2, 1945 3/	No. 35 " "	5	.393
May 1 to Aug. 31, 1945	No. 36 " "	5	.285

1/ Stamp No. 5 had a weight value of 2 pounds and was valid from June 28 to July 25. Stamp No. 7 had a weight value of 2 pounds and was a bonus, valid from July 10 to August 22.

2/ Stamp No. 6 had a weight value of 2 pounds and was valid from July 26 to August 22. Stamp 7 also was valid in this period.

3/ Also, sugarcane and sugar beet growers were allowed 25 pounds of sugar produced from their crops for each person in the family, or 25 pounds per acre grown, whichever was less.

4/ Weight value per week for period until next stamp became valid. Stamps No. 30, 31, 32 and 33 were cancelled as of December 31, 1944, stamp No. 34 as of February 28, 1945.

Table 6.- Ration allowances of sugar for home canning

Year	Maximum quantity per person			Principal regulations applying
	Stamps	Application	Total	
	Pounds	Pounds	Pounds	
1942	0	1/ 6	1/ 6	5 lbs. for canning and 1 for jams and preserves. After May 20, 1 lb. per 4 qts. of fruit and 1 lb. per person for jams and preserves, with no limit on total amount per person.
1943	10	15	25	Stamps No. 15 and 16, book 1 were valid from May 24 to Oct. 31. Applications for the remainder were accepted until Feb. 29, 1944.
1944	5	20	25	Stamp No. 40, book 4 was valid from Feb. 1, 1944 to Feb. 28, 1945. Applications for the remainder were accepted until Feb. 28, 1945.
1945 2/ ..	0	15	15	Applications accepted until Oct. 31, 1945. The total is not to exceed 120 pounds per family. Only 5 pounds per person allowed for canning vegetables and making jams, jellies, relishes, catsup, etc. 2/ 3/

1/ The limit was entirely removed after May 20, 1942.
2/ The maximum was 20 pounds per person from February 23 to May 1, 1945. This was reduced to 15 pounds on May 1.
3/ No local board can issue more than 70 percent as much sugar for home canning as it issued between February 29, 1944 and December 9, 1944, except by permission of the regional office. The total for any region is limited to 70 percent of the previous year. Regional administrators may reallocate quotas between districts and boards.

Table 7.- Monthly allotments for industrial users of sugar

Ration period	Percentage of usage in base period 1/	Base period
1942	Percent	
May, June	70	Same period 1941
July, August, September, October	2/ 80	Same period 1941
November, December	70	Same period 1941
1943		
January-July	70	Same period 1941
August-December	4/ 3/ 80	Same period 1941
1944		
January-December	5/ 4/ 80	Same period 1941
1945		
January-March	6/ 70	7/ Same period 1941
April-June	8/ 65	7/ Same period 1941
July-September	9/ 50	7/ Same period 1941

1/ Not including special allotments.
2/ Includes a 10-percent bonus.
3/ The extra sugar was not issued until August 15 but the increase in the ration is retroactive to August 1.
4/ Additional allotments were given at various times to manufacturers of low-sugar-content breakfast cereals, fruit preserves, and drugs and medicines. A holiday bonus of 10 percent for November and December 1943, was given to all users except those receiving the additional allotments. In 1944, no additional allotments were given for bakery products.
5/ Pharmaceuticals 125 percent.
6/ Bread bakery and cereal products 80 percent and pharmaceuticals 125 percent.
7/ The base for fruit spreads for civilian products is the same period in 1944.
8/ Bread, bakery and cereal products 75 percent. Ice cream and related products 70 percent. Pharmaceuticals 120 percent.
9/ Bread, bakery and cereal products 60 percent and pharmaceuticals 110 percent.

Table 8.- Institutional user allotments of sugar

Year and month	All institutional users: Proportion of base month 1/	All institutional users: Allowance per person per meal	Percent of its own baking done by institution: Non-baking: Proportion of base month 1/	Non-baking: Allowance per person per meal	40 to 74 percent: Proportion of base month 1/	40 to 74 percent: Allowance per person per meal	75 percent or more: Proportion of base month 1/	75 percent or more: Allowance per person per meal
	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds
1942								
May and June	3/ 2/ 50							
July to October	3/ 2/ 75							
November and December	3/ 2/ 60							
1943								
January and February	3/ 60							
March and April	60	4/ .03						
May to October	60	.04						
November and December	60	.05						
1944								
January and February	60	.05						
March to May			60	.03	60	.04	60	.04
June to December			60	.03	72	.04	72	.05
1945								
January to April			51	.0255	64.8	.036	64.8	.045
May and June			42	.0225	54	.03	54	.0375
July			60	.015	72	.022	72	.030

1/ The base month was the corresponding month of 1941 until March 1, 1943; since then it has been December 1942. 2/ A 25-percent bonus became available August 15, 1942, retroactive to July 1. 3/ Institutions for the acutely ill received 65 plus 25 percent in September and October 1942 and 85 percent from November 1, 1942 to March 1, 1943. 4/ Beginning March 1, 1943, the allotment to the quantity per person per meal or the percentage of the base period whichever is smaller.

Table 9.- Sugar, raw basis: Estimated civilian consumption by major industrial groups and by households and institutions, 1939, 1941, 1944 and indications for 1945

Type of consumer	1939	1941	1944	Indicated 1945
	1,000 tons	1,000 tons	1,000 tons	1,000 tons
Industrial uses 1/				
Bread and other bakery products	630	750	700	600
Bottled beverages, extracts and sirup	535	800	750	525
Candy, chocolate, etc.	550	625	600	425
Ice cream, ices and other dairy products 2/	175	250	300	250
Canned, frozen and other bottled foods 3/	247	325	450	300
Other 4/	200	300	300	300
Total industrial	2,337	3,050	3,100	2,400
Total household, institutional and miscellaneous 5/	4,571	4,300	3,057	2,700
Total civilian sugar consumption	6,908	7,350	6,157	5,100
Percent of total civilian use:				
Industrial	34	41	50	47
Household and institutional	66	59	50	53

1/ Data for 1939 from Census of Manufactures, which excludes use by firms with less than $5,000 gross sales. Estimates for 1941 are approximations, based on reports by industrial users to the Office of Price Administration. The total base for industrial users' quotas is somewhat higher than actual total use in 1941 because of adjustments for hardship cases. Estimates for 1944 are based on allocations made by OPA. Indications for 1945 are based on allocations for the first 3 quarters of the year.

2/ Includes bulk sweetened condensed milk and some egg mixes.

3/ Includes canned fruits, jams, jellies, preserves and fruit butters.

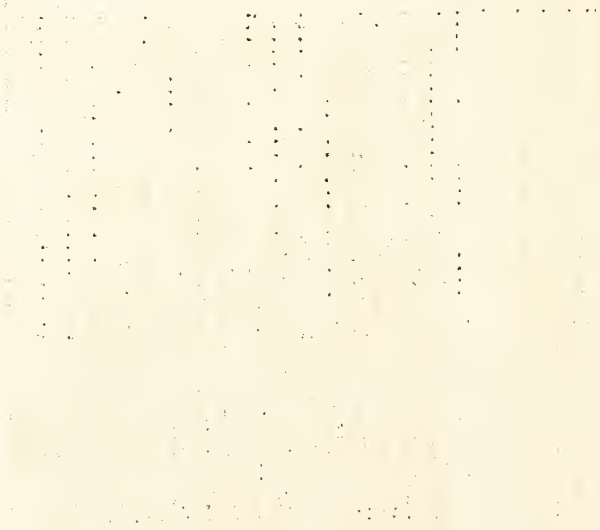
4/ Includes meats, salad dressings, pharmaceuticals and small quantities for other nonfood uses.

5/ Residual after subtracting estimated industrial usage from total civilian consumption.

Table 10.- Sugar Act payments to producers, 1942-45

Area and type of payment	1942	1943	1944 1/	1945 1/
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Continental sugar beet				
Payments on sugar produced	27,813	16,376	17,010	18,630
Abandonment and deficiency payments	2,028	1,234	2,145	3,070
Mainland cane				
Payments on sugar produced	6,555	7,126	6,390	7,245
Abandonment and deficiency payments	535	286	350	255
Hawaii				
Payments on sugar produced	8,147	8,241	8,190	8,250
Abandonment and deficiency payments	0	10	10	0
Puerto Rico				
Payments on sugar produced	13,104	9,028	11,800	13,020
Abandonment and deficiency payments	0	3,300	450	0
Virgin Islands				
Payments on sugar produced	23	56	75	90
Abandonment and deficiency payments	4	0	0	6
All areas				
Payments on sugar produced	55,642	40,827	43,465	47,235
Abandonment and deficiency payments	2,567	4,830	2,955	3,331
Total payments	58,209	45,657	46,420	50,566
Payments per ton of sugar produced 2/	Dollars	Dollars	Dollars	Dollars
Continental sugar beet	16.11	16.31	16.20	16.20
Mainland cane	14.25	13.68	14.52	13.80
Hawaii	9.23	9.30	9.25	9.32
Puerto Rico	12.61	12.45	12.42	12.40
Virgin Islands	15.96	14.93	15.00	15.00

Source: Sugar Branch, Office of Marketing Services.
1/ Estimated.
2/ Not including abandonment and deficiency payments.

Table 11.- Estimated cost of the sugar programs of the Commodity Credit Corporation, by crop years, Dec. 16, 1942 to Dec. 31, 1946

Program	1942	1943	1944	1945	1946	Total
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Continental beet	244	9,195	23,351	33,606	46,475	112,871
Mainland cane--Louisiana	38	2,101	4,279	10,938	13,078	30,434
Mainland cane--Florida			204	1,925	2,008	4,137
West Coast refiners of raw cane sugar	529					529
West Coast refiners and importers of Hawaiian sugar	1,481					1,481
West Coast refiner program			1,552			1,552
Hawaii raw cane sugar	1		4,243	10,500	20,533	35,277
Puerto Rico raw cane sugar	578	2,846	4,362	12,402	23,050	43,238
Puerto Rico direct consumption sugar		372	260	436	433	1,501
Cuba raw cane sugar	15,876	16,116	9,956	25,961	65,129	133,038
Cuba direct consumption sugar		761	840	3,703	8,294	13,598
Dominican and Haitian raw cane sugar		300				300
Virgin Islands raw cane sugar				52	156	208
Peru raw cane sugar				1,511		1,511
Miscellaneous				800	250	1,050
Total	18,747	31,691	49,047	101,834	179,406	380,725